“Pain Management for All Ages: 0-100 in 90 minutes”

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Objectives

• Describe pathophysiology of common cancer pain problems.
• Describe at least one age appropriate systematic method of cancer pain assessment.
• Develop a cancer pain management plan based on case studies.

PAIN DEFINITIONS

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in such terms.

International Association for the Study of Pain
Pain is whatever the person experiencing it says that it is; existing whenever s/he says that it does.

MARGO MCCAFFREY, 1969

“Total Pain”

• Term coined in 1967 by Saunders to describe the all encompassing nature of pain
• Suffering
  • Emotional
  • Social
  • Physical
  • Spiritual

Henry

• 32 year old man with recurrent osteosarcoma of R leg
• Pain in his right hip area and mid lower back not relieved by
• Taking two Percocet 5/325 tablets every four hours for pain
Sally

• 15 year old girl with metastatic osteosarcoma
• Her pain has been managed with hydromorphone (10 mg of long-acting bid and 3 mg short acting q2hrn as breakthrough).

What further assessment data is needed to develop a pain management plan?

PAIN EXPERIENCE

• Place: Where?
• Amount: How much?
• Intensifiers: Worse?
• Nullifiers: Better?
• Effects: Medication effect/side effect? Effect on QOL?
• Description: How does it feel?
Pain Tools for Adults

Pain Intensity Scales
- Numeric Rating Scale
  - 0-10
- Verbal Descriptor Scale
  - No pain to pain as bad as it could be
- Visual Analog Scale
- Bieri Faces Pain Scale
- Pain Thermometer

Pain Assessment Tools
- McGill Short Form
- Brief Pain Inventory

Pain Intensity Tools

Assessing Pain in Non Verbal Adult Patient
- Facial expression
- Behavior changes
- Verbalizations
- Activity/function changes
- Protective actions
- Proxy reports

Tools:
- PAINAD (Pain Assessment in Advanced Dementia)
- CNPI (Checklist of Nonverbal Pain Indicators)
- ADD (Assessment of Discomfort in Dementia Protocol)
Pain Assessment
Continued

- Pain History
  - Prior therapies, recent analgesic use
- Medical History
  - Diagnosis, prognosis, other health problems
- Psychosocial History
  - Substance use
  - Psychiatric diagnoses
- Physical Exam
  - Diagnostic test results if appropriate

Ongoing Assessment

Effectiveness of intervention
- Pain intensity
- Changes in quality, location of pain
- Amount and type of medication used
- Changes in function

Side effects of medication
- Sedation
- Respiratory depression
- Nausea
- Constipation
- Itching

Measuring pain in children

Dozens of measurement tools available
- Validated
  - To varying degrees
  - For some age groups and not others
  - For some types of pain
Measuring pain in children (continued)

- Methods
  - Self-report
  - Behavioral indicators
  - Physiological indicators

General guidelines for use of pain scales

- If one scale doesn’t work, try another
- Use the same scale consistently with a given child

General guidelines for use of pain scales

- Reassess often and document results
- Remember that measuring pain intensity is just one aspect of pain assessment

Pain assessment in children must also be geared to the developmental age of the child.
Pain measurement in children with neurodegenerative impairment

- Many neurodegenerative diseases can impact ability to verbally communicate
- Physical aspects of certain illnesses such as grimacing or hypertonia are associated with pain

(Refer to the NCCPC-R Handout)

Birth - 2 years

- Neonates as young as 24-weeks GA feel pain
- No “understanding” of pain and unable to provide a self-report
- 12 to 18 months, beginning of reasoning and language (1-or 2-word statements)

Tools for birth - 2 yrs, and for cognitively impaired children

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*Full names and sources for these pain scales appear on the “Pain Measurement Tools” Handout.
2 - 4 years

- CNS fully developed
- Development of autonomy continues
- Significant language development
- Limited logic and reasoning
- Self-centered thought process

Tools for children 2 - 7 years

- Poker Chip Tool
- "Pieces of Pain" by Hester et al., 1990*
- Wong-Baker FACES Scale by Wong et al., 1999*

* For full citation, see the "Pain Measurement Tools" handout.

Pain measurement in children 2 - 4 years

- Pain assessment still largely based on behavioral and physiological indicators
- Children can describe their pain using drawings
- Some children 3+ can use the simple rating scales used by children at the low end of the 4 to 7 age range
Tools for children
2+ years

Color Tool and Body Outline Tool
• The child is given a picture showing two
  outlines of a child’s body, front and back.
• The child uses colored crayons to indicate
  where it hurts. Four different colors are
  used to distinguish the severity of the pain.
  *Eland, 1982*

Children’s own drawings of their pain.

4 - 7 years

• Symbolic expression develops
• Child appreciates involvement and choices
• Behavior based on consequences and rewards

Pain measurement in children 4 - 7 years

• Most children in this group can rate their pain on a rating scale
• Pictures are still preferred over words or numbers
• Scales should not give too many choices
  • 3 - or 5 - point scales for children ages 3 to 5
  • 6 - or 7 - point scales okay for older children
7 - 11 years

- Logic and reasoning far more developed
- Imagination and creativity

Tools for children 8 - 11 years

Numeric Pain Scale

Visual Analog Scale

Not hurting
No discomfort
No pain

Hurting a whole lot
Very Uncomfortable
Severe pain

Adolescents (11+ years)

- Cognitively adults
- Adult pain assessment methods
- Abstract thinking and understanding hypothetical situations
- Emotional needs
- Include them in the process
- Respect their privacy
- Respect their pain reports
Tools for adolescents

• Commonly use a simple, 10-point numeric scale
• Also have the verbal skill to use a tool like the Adolescent Pediatric Pain Tool (APPT)

Savedra, Tesler, et al., 1993*  

Henry’s Pain Assessment

• His pain is a constant deep aching 6 on a 0 to 10 scale; increases with walking. Awakens him at night. The Percocet gives him 50% relief that lasts only 2-3 hours. Denies sedation, cognitive changes.
• Limits activity
• Last stool three days ago
• PMH: Bleeding gastric ulcer 2 years ago

On exam, tender over L1-2 vertebrae, R hip ROM limited by pain; 4/5 muscle strength R quads.
• Recent CT scan of pelvis shows metastatic disease in R ischium; no fractures.
• Spinal MRI last done 6 months ago negative for metastatic or degenerative disease.
Sally’s Pain Assessment

- Her pain is a constant 8 on a scale 0 to 10 scale; increases with little notice. Awakens her at night.
- The hydromorphone gives her relief that lasts only 2-3 hours. No complaints of sedation, drowsiness or itchiness
- Limits activity
- Last stool three days ago
- PMH: broken arm playing volleyball 1 year ago

Sally

- She is now complaining of new pain in her left arm (site of recurrence).
- She describes the new pain as ‘a shock – like you get when you walk across the carpet and then touch someone’.
- It spreads down her arm and is not relieved by breakthrough doses of hydromorphone.

Sally

- On exam, tender over scapula, L arm ROM limited by pain; 3/5 muscle strength L biceps.
- Recent CT scan of lungs; shows metastatic disease ? Bony mets - old fractures.
- Spinal MRI last done 6 months ago negative for metastatic or degenerative disease.
Pain Diagnosis

What is the known or presumed cause of pain?
• If cancer pain, is it related to disease, treatment, other etiology

What kind of pain is it?
• Nociceptive
  • Somatic
  • Inflammatory
  • Visceral
• Neuropathic
• Mixed

Duration: Acute, chronic, chronic with acute

Types of Pain

Nociceptive
• Protective
  • Acute injury (venipuncture, bone marrow biopsy)
• Somatic/Inflammatory
  • Bone metastases, arthritis, healing incision
• Visceral
  • Involvement of organs of the thorax, abdomen, pelvis

Neuropathic
• Damage to nervous system causes maladaptive, abnormal processing of pain signals
  • PHN, neuropathy r/t chemotherapy, nerve root compression, post mastectomy pain syndrome

Henry’s Differential Diagnosis

Cancer related pain
• Somatic pain R hip and L1-2 vertebrae related to known and possible disease involvement
• Mixed somatic and neuropathic pain related to known bone lesions and possible L1-2 lesion
• Neuropathic pain R hip related to referred pain from L-2 vertebral involvement

Degenerative changes causing mixed, somatic or neuropathic pain
Sally’s Differential Diagnosis

Cancer related pain
• Somatic pain L arm related to known and possible disease involvement
• Neuropathic pain related to known bone lesions
• Neuropathic pain L arm related to referred pain from lung involvement

Degenerative changes causing mixed, somatic or neuropathic pain

What further diagnostic evaluation is need?

Weigh benefits/burdens of the information and testing

Imaging
• Spinal MRI to r/o cord compression for Henry
• MRI left arm and or chest CT for Sally

What would be a better pain regimen for Henry? for Sally?

Rational Approach to Pain Management

• T reat treatable causes
• O ptimize analgesic medications
• N on pharmacological modalities
• I nvasive procedures
Treat cause

If cancer related, consider
• Surgery
• Chemotherapy
• Biologics
• Radiation therapy

Non-Pharmacological Interventions

• Heat and cold
• Massage
• Physical Therapy
• TENS
• Distraction/Relaxation/Music Therapy/Meditation
• Acupuncture/Energy Work

Non-Pharmacological Interventions

• Enhance the effectiveness of pharmacological interventions
• Reduce the need for medications along with their associated side effects and the risks of adverse drug interactions
• Empower the child and the family
• Meet psychosocial needs
Complementary therapies have been used to manage:

- Procedural pain (especially in infants and neonates)
- Disease-related chronic, or recurrent pain
- Acute or post-operative pain

Providing physical and emotional comfort:

- Touch
- Holding
- Swaddling
- Sucking
- Dimmed lights
- Familiar voices

Cognitive and behavioral methods:

- Distraction
- Imagery
- Hypnosis
Non-Pharmacological Interventions (continued)

Relaxation techniques:
• Deep breathing
• Progressive relaxation
• Meditation (for older children and adolescents)

Physiological methods:
• Warm baths
• Massage
• Acupuncture
• TENS

Other methods:
• Music therapy
• Art therapy
• Play therapy

Interventional Procedures

• Opioids/ local anesthetics via spinal catheters
• Nerve blocks
• Neurosurgical procedures

The use of medications is the mainstay of pain management.

What analgesic changes would you recommend for Henry? for Sally?
WHO Analgesic Ladder

**Pain Relief**
- Opioid for moderate to severe pain
  - + non-opioid +/- co-analgesic
  - Pain persists or increases
- Opioid for mild to moderate pain
  - + non-opioid +/- co-analgesic
  - Pain persists or increases
- Non opioid +/- co-analgesic

Acetaminophen
- Analgesic for mild to moderate pain
- Ceiling dose: 1000 mg/dose
- Maximum dose 2400-4000 mg/d
- Dose lower in elderly
- Liver toxicity if maximum dose exceeded

NSAIDs
- Effective analgesic for somatic pain
- Ceiling doses for each
- Side effects/toxicities
  - Dyspepsia
  - GI Ulceration/Bleeding
    - PPI or misoprostol may limit incidence
  - Renal and hepatic damage
  - Inhibit platelet function
    - Nonacetylated salicylates (Trilisate)
**NSAIDs: Cox 2 Inhibitors**

**Celecoxib (Celebrex)**
- Less gastric ulceration
- Minimal inhibition of platelet function
- Possible cardiovascular events

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**Co-analgesic**

Medications that are primarily used or meant for other purposes but enhance or have analgesic effects in some circumstances.

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**Co-analgesics for Neuropathic Pain**

- **Corticosteroids**
- **Anticonvulsants**
  - Gabapentin (Neurontin)
  - Pregabalin (Lyrica)
  - Some evidence for use of carbamazepine (Tegretol), lamotrigine (Lamictal), topiramate (Topamax), Levetiracetam (Keppra), oxcarbazepine (Trileptal).
- **Anti-depressants**
  - Tricyclics: Amitriptyline (Elavil), Nortriptyline (Pamelor), Despiramine
  - Anticholinergic side effects
  - Mixed action: Duloxetine* (Cymbalta), Venlafaxine* (Effexor)
- **Lidoderm patches**
Gabapentin
(Neurontin)

- Very effective for patients with neuropathic pain from tumor, peripheral neuropathy from tumor or treatment, and PHN.
- Fewest side effects. Most common are sedation, dizziness
- Starting dose: 100 mg three times daily or 300 mg at bedtime. Dose increased as tolerated every 3 to 5 days until analgesia is achieved.
- Renal dosing.
- Effective dose: Between 900 mg - 3600 mg daily in divided doses.
- Ceiling effect related to a saturable transport mechanism in the gut—effects of this drug may plateau during dose escalation.

Pregabalin
(Lyrica)

- Same mechanism of action as gabapentin
- Effective in patients with neuropathic pain.
- Dosing: Start at 50 mg BID or TID, with the usual effective dose between 150 mg - 300 mg BID.
- More efficiently absorbed through the gastrointestinal tract and the absorption is proportional to the dose throughout the effective dose range making titration simpler.

Tricyclic antidepressants (e.g., amitriptyline, nortriptyline)

- When used as adjuvant analgesics, they are effective faster and at lower doses than as antidepressants (e.g., amitriptyline is effective within 2 to 3 days at 50 to 100 mg/day).
- Anticholinergic side effects—Use with caution in the elderly, patients with cardiac conduction abnormalities or bladder outlet obstruction.

Selective serotonin and norepinephrine reuptake inhibitors (SSNRI’s), e.g. venlafaxine and duloxetine

- Analgesic for a number of neuropathic pain syndromes.
Opioids

- For moderate to severe pain
- Partially effective for neuropathic pain
- Morphine, Oxycodone, Hydromorphone, Fentanyl, Methadone, Oxymorphone, Hydrocodone most commonly used
- Barriers to use
  - REMS (Risk Evaluation and Management Strategies)
  - Fear of addiction, diversion
  - Access: Cost, Insurance, Availability

For Henry?
Constant pain may require a background analgesic

For Sally?
May require an increase in background and additional co-analgesics

Background Opioids

**Sustained Release**
- tablets, capsules
  - Morphine sustained release
    - MS Contin 15, 30, 60, 100, 200 mg
    - Kadian 20, 30, 50, 60, 100 mg
  - Avinza 30, 60, 90, 120 mg
  - Exalgo (hydromorphone) 8, 12, 16 mg
  - Oxycontin (oxycodone)
    - 10, 20, 30, 40, 60, 80 mg
  - Opana ER (oxymorphone) 5, 7.5, 10, 15, 20, 30, 40 mg
- transdermal
  - Fentanyl 12, 25, 50, 75, 100 mcg/hr

**Long acting**
- Methadone 5, 10 mg tabs
  - 1 mg/ml, 10 mg/5 ml solution
Determining the Breakthrough Dose

Each breakthrough dose should equal 10-20% of the total 24 hour dose oral morphine equivalent of background opioid

Example:
Fentanyl 150 mcg/hr patch = 300 mg oral morphine in 24 hours
PRN dose = 30-45 mg oral morphine every 3 hours as needed

Short Acting Opioids

- Tablets or capsules
  - morphine 15, 30 mg
  - oxycodone 5, 10, 15, 20, 30 mg
  - oxymorphone 5, 10 mg
  - hydromorphone 2, 4, 8 mg
- Liquid
  - morphine 10 mg/5 ml, 20 mg/5 ml, 20 mg/ml
  - oxycodone 5 mg/5 ml, 20 mg/ml
  - hydromorphone 1 mg/1 ml
- Rectal suppository
  - hydromorphone 3 mg
  - morphine 10 mg

Rapid Acting Opioids

Transmucosal/Buccal
- Actiq (OTFC) 200, 400, 600, 800, 1200, 1600 mcg
- Fentora (FBT) 100, 200, 300, 400, 600, 800 mcg tabs
- Onsolis (FBSF) 200, 400, 600, 800, 1200 mcg film
- Abestral (SLFC) 100, 200, 300, 400, 600, 800 mcg tabs
- Lazanda intranasal fentanyl
Which opioids will be best for Henry?

Which opioids will be best for Sally?

Opioid Selection

- Patient preference and experience
- Drug pharmacokinetics
  - All opioids are metabolized in the liver and excreted by kidneys
  - Metabolic pathways
- Availability of appropriate dosing forms and routes of administration
- Cost and insurance coverage

Routes of Administration

- Oral – preferred
- Sublingual (?), transmucosal
- Transdermal
- Subcutaneous injection or infusion
- Intramuscular injection(almost never recommended in children)
- Intravenous – bolus, infusion, PCA
- Intranasal
- Spinal
Myths Regarding Nebulized and Sublingual Opioids

- Nebulized opioids provide no advantage over other routes of administration for dyspnea or pain
- Sublingual morphine – only 18% absorbed through sublingual mucosa
  - Fentanyl 51%
  - Buprenorphine 55%
  - Methadone 34%
  - Oxycodone 16%

Tramadol (Ultram)

- Opioid receptor agonist with inhibition of re-uptake of serotonin and norepinephrine
- Ceiling dose 300-400 mg/24 hours
- Usual dose 50-100 mg q 6h PRN
- Side effects: dizziness, constipation, sedation, nausea
- Reduces seizure threshold
- Combination with other opioids controversial
Opioids

- Morphine is the standard opioid
  - Active metabolite
- Hydromorphone (Dilaudid)
  - Active metabolite

Opioids

- Oxycodone
  - No known active metabolites
- Fentanyl
  - Lipophilic
- Codeine
  - Analgesic ceiling effect
  - Is no longer recommended as a choice for children’s analgesia (AAP, PEDIATRICS Vol. 99 No. 6 June 1997)

Methadone

- Lipophilic
- Long and variable half life can lead to accumulation of drug and sedation
- May cause Q-T prolongation
- Theorized action as NMDA receptor antagonist make it useful in neuropathic pain
- Equianalgesic conversions vary based on previous opioid use
- Multiple drug interactions
### Common Methadone Drug Interactions

- **Increases methadone levels:**
  - ciprofloxacin, diazepam, fluconazole, grapefruit juice, cimetidine, fluoxetine and urinary alkalinizers
- **Decreases methadone levels:**
  - phenobarbital, phenytoin, carbamazepine, rifampin, ritonavir, amprenavir, efavirenz, nalfinavir, nevirapine and urinary acidifiers

### Transmucosal Fentanyl (Actiq, Fentora, Abestral)

- For opioid tolerant cancer patients with incident pain (pain related to movement or other activity)
- Dosing individual
- Short onset (5-10”) and duration of action (~ 1 hour)
- Apply Actiq to oral mucosa over 15 minutes
- Dissolve Fentora between check and gum

### Oxymorphone

- Opana® and Opana® ER
  - Immediate release formula 5 and 10 mg tabs
  - ER: 5, 7.5, 10, 15, 20, 30, 40 mg tabs
- IV formulation Numorphan® and Opana®
- Only 10% plasma protein bound
- Hepatic metabolism
- AUC increased with high fat foods
- Opana ER C_{max} increases slightly with alcohol
Transdermal Fentanyl

- For stable, chronic pain
- 12-24 hours for onset and discontinuation of action
- Heat increases absorption
- Hydration and nutritional status may affect absorption

Rationale for Changing Drugs

Intolerance
- Sedation
- Persistent nausea/vomiting
- Pruritis
- Urinary retention

Compliance
- The dose of the drug, not the drug itself, causes inadequate pain control.

Opioid Equianalgesic Doses

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<tr>
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<tr>
<td>Dilaudid</td>
<td>7.5 mg</td>
<td>1.5 mg</td>
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<tr>
<td>Fentanyl</td>
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<td>100 ug</td>
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<tr>
<td>Oxycodone</td>
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Fentanyl 25 mcg/hr patch = 50 mg oral morphine equivalent morphine/24 hours
Opioids and Sedatives

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<tr>
<td>Morphine</td>
<td>0.15 – 0.3 mg/kg q4h *</td>
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<tr>
<td>Hydromorphone</td>
<td>0.06 mg/kg q3-4h *</td>
</tr>
<tr>
<td>Lorazepam</td>
<td>0.02 – 0.04 mg/kg q4-6h *</td>
</tr>
<tr>
<td>Midazolam</td>
<td>0.3 – 0.5 mg/kg *</td>
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*Incomplete Cross Tolerance*

A patient who is tolerant to the effect and side effects of one opioid may not be equally tolerant to the effects and side effects of another opioid.

**Converting to New Opioid**

Decrease equi-analgesic dose by 1/3 to 1/2 because of incomplete cross tolerance

Example

- New dose calculates to 90 mg oral morphine
- Subtract 1/3 for incomplete cross tolerance
- 90 mg – 30 mg (1/3) =
- 60 mg oral morphine equivalents/24 hours
Possible Background Opioid Recommendations for Henry

- Oxycodone SR 30 mg q 12 hours
- Morphine SR 30 - 45 mg q12
- Fentanyl 25mcg/hr patch

Breakthrough Opioid Recommendations for Henry

- Oxycodone/acetaminophen 5/325 2 tabs q 4 PRN
- Oxycodone 10 mg q 3 PRN
- MSIR 10 mg q 3 PRN
- Hydromorphone 4 mg q 3 PRN
- Rapid acting fentanyl
- OTFC (Actiq) 200 mcg unit q 3 PRN
- FTB (Fentora) 100 mcg q 2 PRN

- Henry starts
  - Oxycodone SR 20 mg every 12 hours
  - Percocet is stopped and he begins oxycodone 10-15 mg every 3 hours as needed
  - Five days later he continues to report 6/10 pain most of the time
    - Oxycodone 15 mg every 3 hours helps about 75% and lasts 2 hours
    - He is able to move around more comfortable but is not sleeping because of pain
    - Last stool 3 days go; Denies sedation
The key principle in opioid dosing is **incremental titration** of the dose until **Acceptable Pain Relief** OR **Unacceptable side effects**.

**Non Parenteral Dose Titration**
- Start with as needed short acting opioid to establish dose needed.
- If constant pain, add background opioid in dose equal to 75-100% of 24 hour dose of PRN opioid consumed.
- Continue as needed opioid in dose equal to 10-15% of the 24 hour dose of background opioid.

**Parenteral Opioid Dose Titration**
- Start with as needed boluses of short acting opioid or PCA.
- If constant pain, add continuous infusion for background:
  - Hourly rate based on amount used as needed over given time period.
  - Continue as needed bolus doses of 50-100% of hourly rate or PCA.
Rule of Ones

One background and one short acting opioid at a time.

Henry’s Mother
- Asks if you really need to increase the pain medication.
- She thinks he is becoming addicted because he needs more and more pain medication.

Sally’s Parents
- Wonder why she really needs to be on such strong pain medication?
- She’ll just need more and more if we keep giving it to her and she’ll become an addict!

How do you respond?

Explore Their Concern
- What does “addiction” mean?
- Does Henry/Sally have an addiction history? Alcohol? Prescription drugs?
- Is there a history of alcohol or drug addiction in the family?
Tolerance

- Expected effect of chronic opioid use
- Presents as decreased duration of analgesia
- Need of more frequent dosing and/or higher doses to maintain analgesia

Dependence

- Expected effect of chronic use
- Not a sign of addiction
- Withdrawal symptoms when opioid dose is markedly decreased or stopped abruptly
- Symptoms: increased pain, anxiety, lacrimation, rhinorrhea, nausea, diarrhea

Addiction

Psychiatric diagnosis
- Neurobiological disorder marked by
  - Impaired control of drug use
  - Compulsive use
  - Continued use despite harm
Pseudoaddiction

Behaviors associated with inadequate pain control
- Clock watching
- Hoarding

What else should be part of Henry’s pain management plan?

What else should be part of Sally’s pain management plan?
Success =
(Pain Relief + Improved Function) - unmanageable side effects


Common Opioid Side Effects

- Constipation
- Respiratory depression
- Neurotoxicity
  - Cognitive slowing
  - Sedation
  - Myoclonus
  - Delirium
  - Hyperalgesia
- Nausea
- Dry mouth
- Itching
- Sweating
- Urinary Retention

Most Common Side Effects in Children

- Itching
- Nausea
- Urinary Retention
- Constipation
- Neurotoxicity
- All others as adults
Constipation Management

- If appropriate increase fluids, soluble fiber, exercise
- **Aggressive prophylaxis** with scheduled doses of
  - Stool softener - docusate (Do not use alone)
  - Mild laxatives - senna, lactulose, Miralax
- Avoid bulk forming laxatives like Metamucil (psyllium), Citrucil (methylcellulose)

Laxative Choices

- Saline – milk of magnesia, magnesium citrate
- Osmotics – lactulose, sorbitol, polyethylene glycol
- Stimulants – senna, bisacodyl
- Lubricants – mineral oil
- Enemas of saline, tap water, mineral oil, SSE
- Suppositories - glycerin, bisacodyl

Constipation: A New Option

- **Relistor** (Methylnaltrexone bromide) subcutaneous injection for treatment of opioid induced constipation in patients with advanced illness receiving palliative care
- Peripherally acting mu-opioid receptor antagonist
  - Limited effect on CNS opioid receptors
  - Produces stool 30 min to 4 hours
  - Dosed once every other day by sc injection
Relistor (methylnaltrexone) Dosing

<table>
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<th>Weight (pounds)</th>
<th>Dose</th>
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<tr>
<td>&lt; 84</td>
<td>0.15 mg/kg</td>
</tr>
<tr>
<td>84-136</td>
<td>8 mg</td>
</tr>
<tr>
<td>136-251</td>
<td>12 mg</td>
</tr>
<tr>
<td>&gt; 251</td>
<td>0.15 mg/kg</td>
</tr>
</tbody>
</table>

Available solution is 12 mg/0.6 ml

Is it an opioid induced Neuropsychological Change?

Eliminate other etiologies
• Polypharmacy
• CNS pathology
• Metabolic dysfunction
• Psychiatric distress

Management
• If mild and at initiation of opioids, reassure and monitor
• Consider neuroleptics if delirium
• Consider psychostimulants if sedation or mild cognitive changes
  • Methylphenidate (Ritalin) 5-10 mg BID
  • Dextroamphetamine (Dexedrine) 5-10 mg BID
  • Modafanil (Provigil) 200 mg QD
Respiratory Depression

- Rare in opioid tolerant patients
- Preceded by sedation
- Polypharmacy may be a factor

Respiratory Depression Management

- Decrease or hold the opioid
- Provide stimulation
- Oxygen therapy

Narcan (Naloxone)

- Reverses opioid induced respiratory depression and sedation
- REVERSES ANALGESIA
- **Give incrementally**
  - 1 cc (0.04 mg) q 30-60 sec
Conclusions

Pain relief is contingent on
• Comprehensive and ongoing assessment
• Expert use of drug and non-drug analgesic therapies
• Recognition that pain extends beyond physical dimensions to effect all aspect of quality of life
• Interdisciplinary care

The degree to which a child or their caretaker believes pain is well managed can influence many other outcomes such as where a family might choose to care for their child for the end of life phase. Good pain control on the other hand can mean the difference between memories of distress and angst or memories that families want to hold on to.
(Collins, Berde & Frost, 2011)
Thank you!

References


References


